FIELD STUDIES OF OAHU'S NATIVE TREE SNAILS

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Field studies on the population biology of Achatinella mustelina (Hadfield and Mountain, 1980, Pacific Science, Vol. 34) had revealed: (1) existing populations are of relatively low density; (2) the species grows very slowly; (3) reproductive maturity is late; (4) fecundity is probably very low; and (5) a population disappeared as the predatory snail Euglandina rosea invaded the area. These studies provided a basis for prospective analysis of the stability of other populations and were to serve as a model for investigations in North Halawa Valley and the Kahuku area of Oahu.

North Halawa Valley and the hills of Kahuku, both previously inhabited by one or more species of Achatinella, were intensively searched by a 4-6 person field team. No living achatinellids were found in either area, although recently dead Achatinella vulpina were located in North Halawa Valley. The introduced, predatory snail, Euglandina rosea, was ubiquitous in both areas.

In North Halawa Valley, endemic tornatellid snails were located in areas of lush native flora. In the Kahuku study area, other tornatellinid species were present, here living on exotic plants, principally Casuarina. Native zonitid snails were also found on the ground, in the Casuarina litter. Interesting new research questions are thus raised: principally, why do the two closely related snail groups, the achatinellids and tornatellids, react so differently to human-related disturbance? They have apparently similar life histories, but differ greatly in adult sizes. Possible answers are posed.